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(Superseding IS 768 : 1982)

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वस्त्रादि — रंग के पक्केपन के परीक्षण

भाग ए03 स्टेनिंग के लिए ग्रे स्केल

Indian Standard

TEXTILES — TESTS FOR COLOUR FASTNESS

PART A03 GREY SCALE FOR ASSESSING STAINING

ICS 677.016.47 : 620.191.73.05

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 2006

Price Group 2

NATIONAL FOREWORD

This Indian Standard (Part A03) which is identical with ISO 105-A03 : 1993 'Textiles — Tests for colour fastness — Part A03 : Grey scale for assessing staining' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Chemical Methods of Test Sectional Committee and approval of the Textile Division Council.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

With the publication of this standard, IS 768 : 1982 'Method for evaluating change in colour (*first revision*)' stands withdrawn.

The composition of Technical Committee responsible for the preparation of this standard is given in National Annex A.

In reporting the results of a test or analysis made in accordance with this standard, if the final value observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

TEXTILES — TESTS FOR COLOUR FASTNESS

PART A03 GREY SCALE FOR ASSESSING STAINING

1 Scope

This part of ISO 105 describes the grey scale for determining staining of adjacent fabrics in colour fastness tests, and its use. A precise colorimetric specification of the scale is given as a permanent record against which newly prepared working standards and standards that may have changed can be compared.

2 Principle

2.1 The essential, or 5-step, scale consists of five pairs of non-glossy grey or white colour chips (or swatches of grey or white cloth), which illustrate the perceived colour differences corresponding to fastness ratings 5, 4, 3, 2 and 1. This essential scale may be augmented by the provision of similar chips or swatches illustrating the perceived colour differences corresponding to the half-step fastness ratings 4-5, 3-4, 2-3 and 1-2, such scales being termed 9-step scales. The first member of each pair is white in colour and the second member of the pair illustrating fastness rating 5 is identical with the first member. The second members of the remaining pairs are increasingly darker in colour so that each pair illustrates increasing contrasts or perceived colour differences which are defined colorimetrically. The full colorimetric specification is given below.

2.2 The chips or swatches shall be white or neutral grey in colour and shall be measured with a spectrophotometer with the specular component included. The colorimetric data shall be calculated using CIE 1964 supplementary standard colorimetric system (10° observer data) for illuminant D_{65}.

2.3 The Y tristimulus value of the first member (white) of each pair shall be not less than 85.

2.4 The second member of each pair shall be such that the colour difference between it and the adjacent first member is as follows:

Fastness grade	CIELAB difference	Tolerance
5	0	0,2
(4-5)	2,2	± 0,3
4	4,3	± 0,3
(3-4)	6,0	± 0,4
3	8,5	± 0,5
(2-3)	12,0	± 0,7
2	16,9	± 1,0
(1-2)	24,0	± 1,5
1	34,1	± 2,0

(Bracketed values apply only to the 9-step scale.)

2.5 Use of the scale. Place a piece of the unstained, adjacent fabric (the original piece) and the piece which has been part of a composite specimen in a fastness test (the tested specimen) side by side in the same plane. The surrounding field should be neutral grey colour approximately midway between that illustrating grade 1 and that illustrating grade 2 of the grey scale for assessing change in colour (this is approximately Munsell N5). If necessary to avoid effects of the backing on the appearance of the textiles, use two or more layers of the unstained undyed textile under both original and treated pieces. Illuminate the surfaces with north sky light in the Northern hemisphere, south sky light in the Southern hemisphere, or an equivalent source with an illumination of 600 lx or more. The light should be incident upon the surfaces at approximately 45°, and the direction of viewing approximately perpendicular to the plane of the surfaces. Compare the visual difference between the original piece and the tested specimen with the differences represented by the grey scale.

If the 5-step scale is used, the degree of staining of the tested specimen is that number of the grey scale which has a perceived colour difference equal in magnitude to the perceived colour difference between the original and the tested specimens; if the latter is judged to be nearer the imaginary contrast lying midway between two adjacent pairs than it is to either, the tested specimen is given an intermediate assessment, for example 4-5 or 2-3. A rating of 5 is given only when there is no perceived difference between the tested specimen and the original piece.

If the 9-step scale is used, the degree of staining of the tested specimen is that number of the grey scale which has a perceived colour difference nearest in magnitude to the perceived colour difference between the original piece and the tested specimen. A rating of 5 is given only when there is no perceived difference between the tested specimen and the original piece.

When a number of assessments have been made, it is very useful to compare all the pairs of original and tested specimens which have been given the same numerical rating. This gives a good indication of the consistency of the assessments, since any errors become prominent. Pairs which do not appear to have the same degree of contrast as the remainder of their groups should be re-checked against the grey scale and, if necessary, the rating should be changed.

NATIONAL ANNEX A

(*National Foreword*)

COMMITTEE COMPOSITION

Chemical Methods of Test Sectional Committee, TX 05

Organization	*Representative(s)*
Textiles Committee, Mumbai	Dr G. S. Nadiger (***Chairman***) Shri E. Viswambharam (*Alternate*)
Bapuji Institute of Engineering & Technology, Davangere	Dr H. L. Vijaykumar Dr K. Murugesh Babu (*Alternate*)
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Organization	*Representative(s)*
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The Synthetics & Art Silk Mills' Research Association, Mumbai	Shri K. S. Taraporewala Shri D. L. Shah (*Alternate*)
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Shri Anil Kumar
Joint Director (Textiles), BIS

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This Indian Standard has been developed from Doc: No. TXD 05 (0789).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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Printed at Simco Printing Press, Delhi